

Introduction

Portland General Electric Company (“PGE”) is Oregon’s largest electrical utility, proudly serving Oregon homes and businesses for more than 125 years. A vertically-integrated electric utility, PGE delivers safe, reliable, sustainable power to more than 848,000 residential, commercial and industrial customers in the Portland metro region and the northern Willamette Valley.

For more than a century, PGE has been investing in our community in a manner that reflects our customers’ values, our employees’ community interests and the needs of the communities we serve. That includes supporting programs that help protect fish and wildlife, enhance air and water quality and promote the wise use of energy. Our employees and customers live, work and recreate in our community, and use and enjoy the Willamette River. Therefore, PGE supports a **responsible Harbor cleanup plan that:**

- **Protects public health and the environment through cost effective risk reduction.** Much of the contamination present in the Harbor goes back decades due to Portland’s long industrial history, the status of the Willamette River as a working river and its core contribution to the economic development of the city and region, including its support for the U.S. military during and after World War II. A significant amount of valuable work and money has already been invested to address Harbor cleanup, including early actions within the Harbor, upland source control, addressing upstream sites, and Portland’s “Big Pipe”, a \$1.44 Billion, 20-year project that reduced combined sewer overflows. The United States Environmental Protection Agency’s (“EPA”) approach to the Harbor cleanup should build upon these previous efforts to further reduce risks to the community with a remedy that:
 1. Utilizes current and reliable data to properly evaluate the current risk
 2. Balances the use of active and passive remediation technologies to realize immediate risk reduction while allowing for long-term natural recovery
 3. Can be completed in a manner that minimizes short-term impacts to the community and the environment. The cleanup should be accomplished using proven cost-effective remedial approaches, which in this context means that the selected cleanup approach should be based on risk reduction balanced with incremental additional cost.
- **Takes into account the fact that the Harbor is an active, working harbor.** It is Oregon’s largest seaport and a critical gateway for many Northwest businesses to both domestic and international markets. During the cleanup and afterwards, the harbor needs to continue to serve that important navigation function and river-dependent businesses need to be assured they can continue to operate with minimal disruptions.
- **Understands, evaluates and mitigates the direct economic impacts to the region.** A substantial percentage of the cleanup costs will likely fall principally on the region’s governmental entities utilities and local businesses. Most of these costs may ultimately be passed along to our citizens and customers and this will have a direct effect on the region’s economy. The EPA has a duty to select a cost effective remedy that provides overall risk reduction and protectiveness

proportional to its cost. The Harbor superfund site listing has already negatively impacted development¹ due to uncertainty over liability. An unnecessarily costly cleanup plan can further impair industrial development and existing businesses in and around the Harbor.

PGE strongly believes that it will be necessary to take all these considerations into account in crafting a comprehensive proposed cleanup remedy for the Harbor. Unfortunately, we feel the EPA's current proposal fails to do so. In general, PGE believes that EPA's Proposed Remedial Action Plan ("PRAP") for the Harbor has significant problems which we discuss in more detail below. These problems include: (1) use of outdated sampling and analytical data; (2) a costly cleanup plan that does not provide significant additional risk reduction over less costly alternatives; and (3) EPA's underestimation of actual costs and implementation timeframe and challenges.

Issues

Risk Management – One of the key considerations for the overall Comprehensive Environmental Response, Compensation and Liability Act process is risk management. Risk management and the related cost benefits of the alternatives should be evaluated further and should play a larger role in EPA's decision making process. In the Proposed Remedial Action Plan (PRAP), EPA makes statements that Alternatives B and D do not achieve risk reduction targets. However, as identified in the Feasibility Study ("FS"), these alternatives achieve the same order of magnitude of risk reduction as EPA's proposed alternative and would result in risks that fall within the acceptable range of 10^{-4} and 10^{-6} . EPA recognizes the uncertainty of its estimates on Page 1-22 of the FS which states: *"The greatest source of uncertainty in the risk and hazard estimates includes the lack of good site-specific information about consumption of resident fish from the Site."* EPA goes on further to state in the FS that EPA is reasonably confident that the actual cancer risks will not exceed the estimated risks presented in the Baseline Human Health Risk Assessment. Much of the cleanup activity and significant financial capital will be spent trying to address this substantial uncertainty. Using overly-conservative evaluations to protect uncertain risks not supported by site-specific information will not result in a responsible harbor cleanup.

Outdated Sampling and Analytical Data – The Harbor has been listed on the National Priorities List ("NPL") for 15 years. In the PRAP, EPA is relying on river-wide sampling and analytical data collected between 2001 and 2008. This outdated data is not appropriate or indicative of the present conditions in a dynamic system like that found in the Willamette River. More recent surface sediment and fish tissue data is available to EPA that shows how current river conditions have improved significantly since 2008. On page 1-20 of the FS, EPA recognizes that contaminant concentrations are generally higher in subsurface sediments than in surface sediments, indicating both higher historical contaminant inputs and improving sediment quality over time. This observation implies that natural recovery is working and could be relied on for further site cleanup of areas with low to moderate levels of contamination. Consistent with EPA guidance on managing sediment sites (EPA 2005²), we believe that a combination of sediment cleanup methods (including monitored natural recovery) is the most effective way to manage

¹ The Superfund's Paralyzing Effect on Portland, Portland Business Journal, May 16, 2014

² Contaminated Sediment Remediation Guidance for Hazardous Waste Sites – EPA 2005.

risk and temporal factors at a large and complex site like the Harbor. A comprehensive resampling of the river to determine current conditions and re-evaluation of the remedial alternatives with this new data should be performed before the Record of Decision (“ROD”) is finalized to ensure an appropriate risk-based remedy is selected.

Cost and Schedule Issues – In the PRAP, EPA states that the in-river construction portion of Alternative I can be completed in seven years at a cost of approximately \$1 billion. Those estimates are inappropriately low. EPA needs to present realistic cost estimates to allow the public to make an informed decision on the benefits of the various alternatives. Realistically, the in-river construction component of Alternative I could not be completed in fewer than 10 years and it is likely to take 12-15 years, as suggested in several independent assessments³. Additionally, the overall remedy will likely cost at least double the current estimate. EPA’s cost estimates were reduced by roughly half from the draft FS, while the overall scope of work was not reduced significantly. Four environmental firms provided independent cost estimates for Alternative I that produced a range of \$1.62B to \$1.8B compared to EPA’s non-discounted \$1.17B. Assuming a more realistic cost estimate, Alternative I’s costs are disproportionately higher than its benefits as indicated in the Portland Harbor Sustainability Project⁴

PGE further believes that cost assumptions are low based on our own experiences. PGE recently installed a sediment cap in the Downtown Reach portion of the Willamette River with DEQ oversight. Our cap was roughly 1.25 acres in total area. We conducted a competitive bid process for the work. For our cap, the overall cost (design, permitting, oversight, easements, and construction) was roughly \$1.3M/acre. This amount did not include additional costs related to regulatory oversight in the Harbor. While there may be savings as the Harbor cleanup will be on a much larger scale, the current cost estimates still appear to be unrealistically low.

We also suggest that EPA validate its unit costs. EPA’s estimate for sand and other natural armoring options are 2 to 3 times lower than what PGE recently experienced. The amount of debris we removed (45 tons/acre) is significantly more than EPA estimates for what will likely be comparable remediation. Oregon Department of State Lands charged PGE \$118,000/acre for an easement to perform the work. Remedial design, permitting, oversight, and project management costs are expected to be significantly higher than the 7-10% estimated by EPA. For our cap project, those costs were a third of the overall budget.

The duration and production assumptions for dredging are also unrealistic. EPA is assuming work will be performed 24 hours per day, six days per week with no assumed construction delays. EPA’s production

³ Portland Harbor Sustainability Project, 2016. *Evaluation of EPA Portland Harbor Superfund Site Remedial Alternatives. Environmental, Economic, and Social Analysis Reports*. Prepared by AECOM, NERA, and SEA Environmental Decisions, Ltd. on behalf of the Portland Harbor Superfund Site Sustainability Project for submittal to U.S. EPA Region 10, Seattle, Washington. September 2016

⁴ Portland Harbor Sustainability Project, 2016. *Evaluation of EPA Portland Harbor Superfund Site Remedial Alternatives. Environmental, Economic, and Social Analysis Reports*. Prepared by AECOM, NERA, and SEA Environmental Decisions, Ltd. on behalf of the Portland Harbor Superfund Site Sustainability Project for submittal to U.S. EPA Region 10, Seattle, Washington. September 2016

rate assumption is nearly double the estimates produced by three independent parties⁵. Assuming no delay in the dredging is unrealistic as there will be mechanical downtime, weather issues, delays due to monitoring, best management practices, and other issues. The seasonal efficiency of our recently completed capping project at RM13.5 was approximately 47% (5 days per week and 10 hours per day). Our cleanup costs would have been much higher if the contractor had worked weekends and extended hours into the night.

Principle Threat Waste – EPA has taken a liberal approach in defining Principle Threat Waste (PTW) in the Harbor PRAP. In the PRAP, EPA states *“Principal threat waste (PTW) was identified at the Site based on one or more of the following considerations: a 10⁻³ (one in a thousand) cancer risk, existence of source material (non-aqueous phase liquid [NAPL]) within the sediment bed, or on an evaluation of mobility of contaminants in the sediment.”* However, EPA’s own PTW guidance states: *“The concept of principal threat waste and low-level threat waste, as developed by EPA in the NCP [National Contingency Plan] and expanded in subsequent guidance, should be applied on a site-specific basis when characterizing “source material.” Source material is defined as material that includes or contains hazardous substances, pollutants, or contaminants that act as a reservoir for migration of contamination to ground water, to surface water, to air, or acts as a source for direct exposure.”*⁶ PGE believes that while sediment, or other media, that contains part per billion concentrations may pose low level risks, they should not be considered “source material” as EPA’s own guidance advises.

Sustainability Evaluation – EPA has not considered the sustainability of the cleanup alternatives for the Harbor. PGE urges EPA to consider sustainability during the remedial decision making process. A sustainable solution starts with transparent stakeholder engagement and uncertainty analysis. A sustainable solution also evaluates benefits and losses (environmental, social and economic) and makes informed decisions about the trade-offs. The economic losses resulting from remediation expenditures can be weighed against the gains from risk reduction and redevelopment of brownfields resulting from the removal of any Superfund designation stigma. At the heart of a sustainable solution is an accurate and current assessment of the problem and a clear definition of what success looks like. Success must be defined in realistic terms (e.g. what can be achieved and how long it will take). Thus, the goals of this remediation must be redefined so that the public and potentially responsible parties understand what they are paying for and what they can reasonably expect to achieve with the remediation of Portland Harbor. PGE encourages EPA to consider the results of the Portland Harbor Sustainability Project.

Role of Oregon Department of Environmental Quality Concerning Groundwater and River Banks – EPA has indicated in the PRAP that Alternative I will address groundwater contamination beneath the river and river banks. However, the FS indicates that those issues are being characterized and evaluated by the Oregon Department of Environmental Quality (“DEQ”). PGE recommends that DEQ continue to manage the river banks and groundwater contamination and that EPA defer to DEQ on these matters.

⁵ Portland Harbor Sustainability Project, 2016. *Evaluation of EPA Portland Harbor Superfund Site Remedial Alternatives. Environmental, Economic, and Social Analysis Reports.* Prepared by AECOM, NERA, and SEA Environmental Decisions, Ltd. on behalf of the Portland Harbor Superfund Site Sustainability Project for submittal to U.S. EPA Region 10, Seattle, Washington. September 2016

⁶ Rules of Thumb for Superfund Remedy Selection – EPA 1997

River Banks Present Special Challenges –The river banks are typically over-steepened beyond the angle of repose associated with the native soils and sediment and that angle is maintained by the presence of extensive arrays of timber piling throughout the Harbor. The combination of over-steepened slopes with buildings, timber pilings and other structures in proximity to the top of the river bank make any form of dredging or excavation very difficult along these shorelines. EPA must not assume these areas can be safely dredged or excavated because the removal of the pilings (which is required prior to dredging) may make the structures along the shoreline geotechnically unstable. This remediation may require the development of new remedial technologies which at present do not exist. These unknown technologies represent both technical and regulatory challenges and carry the likelihood of significant and, as yet, unknown costs.

Water Quality – Remedial Action Objective number 3 (“RAO 3”) in the FS addresses the reduction of *risks to people from direct contact (ingestion, inhalation, and dermal contact) with contaminants of concern in surface water*. It should be noted that the DEQ website indicates that it is generally safe to swim in the Willamette, even with the presence of contaminants found in the Harbor. RAO 3 should be eliminated or readdressed to determine how appropriate it is if current water sampling conducted by DEQ shows the risk to direct human health surface water exposure to be minimal.

Short-Term Effectiveness – The PRAP does not appear to adequately address the potential for accidents during construction and local disruptions (i.e., increased truck traffic, bridge openings, impact to businesses, etc.). There is a risk of accidents associated with all remediation work. This work will be no different, and may possibly be more risky, due to the anticipated increased truck and river traffic. It is conceivable that the cleanup activities have the potential to produce more adverse risks and injuries than the risks posed by the current condition of the river. Therefore, any work should be evaluated for this risk. Similarly, additional work and longer construction times will result in additional noise/air/light impacts and other quality of life issues in addition to more traffic and bridge openings. This issue should be explicitly evaluated and should be a significant consideration for EPA. The Portland Harbor Sustainability Project⁷ looked at this issue and that work should be utilized by EPA.

New approach not reviewed by National Remedy Review Board – The proposed alternative (Alternative I) in the PRAP for the Harbor was created after preparation of the draft FS, presentations to the National Remedy Review Board (“NRRB”) and presentations to the Contaminated Sediments Technical Advisory Group (“CSTAG”). The NRRB was created by EPA to provide a faster, fairer, and more efficient cleanup program. The CSTAG is a technical advisory group established to monitor and provide advice at a small number of large, complex or controversial contaminated sediment Superfund sites. The lack of a review of Alternative I by the NRRB and CSTAG results in an inconsistent approach and lack of adequate review in the overall process.

⁷ Portland Harbor Sustainability Project, 2016. *Evaluation of EPA Portland Harbor Superfund Site Remedial Alternatives. Environmental, Economic, and Social Analysis Reports*. Prepared by AECOM, NERA, and SEA Environmental Decisions, Ltd. on behalf of the Portland Harbor Superfund Site Sustainability Project for submittal to U.S. EPA Region 10, Seattle, Washington. September 2016

Summary

PGE believes a proactive, thoughtful plan to address the Harbor that takes into account all risks and costs are needed to best serve the Portland community. EPA needs to provide a more accurate evaluation that takes these considerations into account. EPA should focus on what the real risk reduction is and the overall cost/benefit of any remedial action. This is a cost that will be borne by the region and an appropriate balance of many factors – technical, social and financial should be made to achieve a responsible Harbor cleanup plan.